

(U.S. Patent No. 5,273,610, hereafter "Thomas"). For the reasons which follow, Applicants respectfully traverse the rejection.

Turner discloses "a plasma monitoring and control method and system monitor and control plasma in an electronic device fabrication reactor by sensing the voltage of the radio frequency power that is directed into the plasma producing gas at the input to the plasma producing environment of the electronic device fabrication reactor." (Abstract). Turner further discloses that the radio frequency power signal sensed is analogous to that from an FM radio signal. (Column 7, lines 33-34). A radio frequency power generator generates a 13.56 MHz signal that "has few or no harmonic signals." (Column 7, lines 34-35). Measuring the radio frequency signal at the load produces a distorted harmonic-rich frequency signal; filter circuits and a splitter selective to the harmonic frequencies of the fundamental frequency, e.g., 13.56 MHz, output to a multiplexer as a clean sine wave signal at a selected harmonic frequency. (Column 7, lines 39-52). A magnitude detector then determines the magnitude of the signal. (Column 7, lines 51-54).

Thomas discloses a current sensor having a radiation emitter and a radiation detector for sensing current flowing to a plasma generating electrode from an RF power source. (Abstract). A voltage sensor and a second current sensor provide the voltage and phase angle of the current delivered to the plasma generating electrode and permit calculation of the power delivered. (Abstract).

The Examiner references Turner for disclosing a plurality of generator means (identified as no. 12 of figures 1 and 5) for generating a plurality of power outputs onto a single transmission means at a plurality of frequencies, each one of said plurality of outputs having associated characteristics. (Office Action, page 2). Common detection means for detecting these

associated characteristics include means for sensing characteristics of a first generated output at a first frequency, alternating to a second frequency. (Office Action, page 2).

The Examiner acknowledges, however, that Turner fails to disclose features of a common detection means for sensing associated characteristics of a first generated output at a first frequency and the associated characteristics of a second generated output at a second frequency. (Office Action, page 2).

To fill the acknowledged gap, the Examiner references Thomas for disclosing a current sensor. The Examiner further explains that “since the detecting means [of Thomas] can be switched to a second frequency, and the tuning means can be tuned to any desired frequency, it is obvious to say that any number of tuning means can be used with any number of generating means.” (Office Action, page 3). According to the Examiner, “it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply the technique of Thomas to the system of Turner in order to allow a single device to measure voltage, current and phase at more than one frequency.” (Office Action, page 3).

In order to establish a *prima facie* case of obviousness, each of the references cited must teach every element recited in the claims and identify the necessary motivation to combine these elements. *In re Rouffet*, 149 F. 3d 1350; 47 USPQ2d 1453 (Fed. Cir., 1998). The cited references fail both to teach every element of Applicants claims and to identify the necessary motivation to combine the teaching to arrive at Applicants’ claims. Statements with regard to relevant skill in the art do not suffice to “bridge over gaps in substantive presentation of an obviousness case.” *Al-Site Corp. v. VSI International, Inc.*, 174 50 USPQ2d 1161 (Fed. Cir. 1999). It is respectfully submitted that the cited references fail not only to disclose or teach each element of the Applicant’s claims, they also fail to provide the requisite suggestion *to do* what

the applicants have done. For these reasons alone, the Examiner's unsupported pronouncement as to what may be "obvious" is an improper basis to sustain the rejection. The rejection of the claims is therefore insufficient as a matter of law. *Ex parte Levengood*, 28 USPQ2d 1300, 1301-02 (BPAI 1993).

Instant Claims 1 and 23 call for "a plurality of generator means for generating a plurality of power outputs onto a single transmission means...at a plurality of frequencies..." Claim 12 calls for "generating a first power output at a first frequency and generating a second power output at a second frequency." As the Examiner provides in the Office Action, Turner, however, discloses a single generator (12) generating a 13.56 MHz signal that has few or no harmonic signals. Turner thus fails to disclose a plurality of power outputs, at a plurality of frequencies, onto a single transmission means. Clearly, Turner does not meet the elements of Applicants' claims; neither does the Examiner's rejection. Moreover, no rationale is presented to account for this apparent gap in Turner. All elements and limitations of the Applicants' claims have not been accounted for by the rejection. It therefore fails as a matter of law. *In re Rouffet*, 149 F. 3d 1350; 47 USPQ2d 1453 (Fed. Cir., 1998).

Since Turner fails to disclose generating a plurality of power outputs at a plurality of frequencies, onto a single transmission means, it is not surprising that it would not contemplate a common detection means for the outputs. Applicants submits that in contrast, Turner teaches away from this. In Turner, a distorted harmonic-rich signal results at the load, where it is measured (and later filtered to avoid distorted results). Turner is not concerned with sensing associated characteristics of first and second outputs at first and second frequencies, in fact, it seeks to reconcile harmonic frequencies to obtain a "clean sine wave signal" for sensing. (See Column 7, lines 50-51). Therefore, apart from the unacknowledged gaps in its disclosure,

Turner also fails to teach, suggest or motivate combination to fill the gaps the Examiner acknowledges, i.e., the common detection means as claimed. In the rejection, the Examiner places Turner in a role it cannot fill.

That Turner is miscast does not make Thomas sufficient in performing its assigned purpose in upholding the rejection. Thomas is not. Aside from never providing an explanation of how the system of Thomas, and its radiation emitter and detector, would be adapted for use in the system of Turner (even if there were some motivation, teaching or suggestion to do so in Turner, which there is not) the Examiner does not account in Thomas for Applicants' claimed common detection means or the sensing or switching steps of the Applicants' method claims (Claim 12). This is clear from the Examiner's statement that "any number of tuning means can be used with any number of generating means." Such statement not only falls well short of supporting such application of what Thomas actually discloses (as it fails to disclose, e.g., a "number of tuning means") but this statement also falls well short of meeting the "common detection means" detecting characteristics of a plurality of outputs. If it is the Examiner's contention that a plurality of Thomas' systems (replicating multiple tuning means and generating means) would render Applicants' claims obvious, then Applicants should know:

- 1) what motivates, supports or teaches this application of Thomas, and, more importantly, 2) what then motivates, supports or teaches this interpretation of Thomas such that it enjoys any expectation of success when it is somehow combined with Turner.

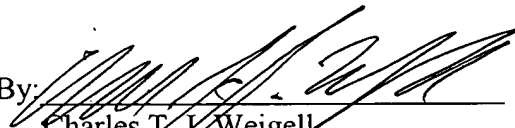
It is plain that the asserted combination of Turner and Thomas is inadequate to make out a *prima facie* case of obviousness. The citations lack the disclosure to meet all of Applicants' claim elements and the citations provide utterly no motivation for the asserted combination. The record contains only the Examiner's speculation as to the ability of the

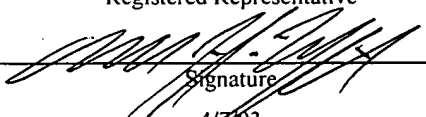
asserted combination to render Applicants' claims obvious. It is well settled, however, that an obviousness rejection must be based on facts, not generalities. *Ex parte Saceman*, 27 USPQ2d 1472, 1474 (BPAI 1993). "Cold hard facts." *In re Freed*, 165, USPQ 570, 571-72 (CCPA 1970). When a rejection under § 103 is not based on facts, it cannot stand. *Ex parte Porter*, 25 USPQ2d 1144, 1147 (BPAI 1992). Speculation and conjecture are not substitutes. Therefore, the rejection fails as to all independent claims, and, as to all other dependent claims. All claims should be allowed.

### CONCLUSION

For the reasons set forth above, entry of the amendments, reconsideration, and allowance of the claims respectfully is requested. If the Examiner has any questions regarding this paper, please contact the undersigned attorney.

Respectfully submitted,

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